REMARKS

The specification and claim 4 have been amended to correct typographical errors in the abbreviations for transforming growth factor α (TGF-α) and insulin-like growth factor I (IGF-I). Support for these amendments can be found throughout the specification, including, for example, pages 12, lines 22-23.

New claims 27-35 have been added. New dependent claims 27 and 28 recite that the composition is formulated for topical or transdermal delivery. Support for new claim 27 can be found in the specification, for example, at page 17, lines 4-17, while support for new claim 28 can be found at page 18, lines 9-20. New dependent claim 29 recites that the composition is a gel, a lotion, a cream, a rinse, a foam, a mousse, or a spray. Support for claim 29 can be found throughout the specification, including at page 16, lines 15-21 and page 17, lines 4-9. New claims 30 and 31 recite that the composition further includes platelet-derived growth factor (PDGF) or PDGF and insulin. Support for new claims 30 and 31 can be found throughout the specification, including, for example, at page 13, lines 3-7. New claims 32-35 relate to an article of manufacture that includes a composition containing placental alkaline phosphatase and a gel-forming material. Support for claims 32-35 can be found throughout the specification, including at page 24 and 25, and in the originally filed claims. Reconsideration and allowance of claims 1-5, 7-10, and 28-35 is respectfully requested.

Rejection under 35 U.S.C. §102

Claims 1-3, 5, 7, and 10 stand rejected under 35 U.S.C. §102(b) as being anticipated by Starkweather. The Examiner asserted that the Starkweather reference teaches a placental alkaline phophatase in a buffer solution with agar. The Examiner noted that the serum of the Starkweather reference would inherently contain a growth factor.

Applicant respectfully disagrees with the Examiner. The Starkweather reference discloses methods of separating liver, bone, placental, intestinal, and bile alkaline phosphatase isoenzymes into well-defined bands using agarose gel electrophoresis. The Starkweather reference does not disclose a composition *for wound healing* that includes placental alkaline phosphatase and a gel-forming material as recited in Applicant's claim 1 (emphasis added).

Applicant submits that a preamble must be read in the context of the entire claim (MPEP §2111.02). The preamble reciting the purpose or intended use of the claimed invention must be evaluated to determine whether the recited purpose or intended use results in a structural difference between the claimed invention and the prior art. If so, the recitation serves to limit the claim. See, *e.g., In re Otto*, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963). Applicant submits that the agarose gel electrophoresis of alkaline phosphatase isoenzymes of the cited art is not capable of performing wound healing, which is the intended use recited in Applicant's preamble. See, *e.g.,* MPEP §2111.02 and *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997). Therefore, Applicant's claimed composition for wound healing is novel and not anticipated by the Starkweather reference. Accordingly, Applicant respectfully requests that the rejection of claims 1-3, 5, 7, and 10 under 35 U.S.C. §102(b) be withdrawn.

Rejection under 35 U.S.C. §103

Claims 1-5 and 7-10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Starkweather taken with Altruis Biomedical Network. The Examiner stated that the Altruis reference teaches that growth factors such as IGF-I are well known in the art and are similar to insulin. The Examiner further stated that, "it would have been obvious to one of ordinary skill in the art to use IGF-I as the specific growth factor since it would have been merely a choice of the artisan in an effort to optimize the results to use IGF-I. IGF-I, insulin and the like are well known growth factors (see Atruis), to use them is simply a choice by the artisan." This rejection is respectfully traversed.

The Starkweather reference is discussed above with respect to the 35 U.S.C. §102(b) rejection. As stated above, the Starkweather reference does not teach or suggest using placental alkaline phosphatase and a gel-forming material in a composition for wound healing. Applicant submits that the Altruis reference does not cure the deficiencies of the Starkweather reference. The Altruis reference contains a list of growth factors and a brief description of their features and characteristics. The Altruis reference does not teach or suggest a composition for wound healing that includes placental alkaline phosphatase and a gel-forming material as recited in claim 1. In addition, the fact that growth factors such as IGF-I are well known in the art does not make

not 102

obvious a composition for wound healing that includes a combination of a growth factor, placental alkaline phosphatase, and a gel-forming material, as, for example, recited in claim 4.

Neither reference, either alone or in combination, teaches or suggests the claimed invention. Accordingly, Applicant respectfully requests that the rejection of claims 1-5 and 7-10 under 35 U.S.C. §103 be withdrawn.

Claims 1-5 and 7-10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Eckert et al. in view of Starkweather and Altruis Biomedical Network. The Examiner asserted that the Eckert reference teaches a bandage containing buffer, alkaline phophatase and agarose, as well as a bandage containing human epidermal growth factor, alkaline phophatase and agarose. The Examiner refers to Examples 1 and 2 of the Eckert reference. The Examiner further asserted that, "[t]he adjustment of particular conventional working conditions (e.g., determining result effective amounts [*sic*] of the enzyme, especially within the broad ranges instantly claimed) is deemed merely a matter of judicious selection and routine optimization which is well within the purview of the skilled artisan." Applicant respectfully traverses this rejection.

Applicant submits that the Eckert reference teaches a biological bandage that secretes biologically active cellular products such as growth factors. Contrary to the Examiner's assertion, the Eckert reference does not teach or suggest including alkaline phosphatase in such a bandage. Rather, the Eckert reference uses calf alkaline phosphatase to dephosphorylate nucleic acids that are to be used in ligation reactions. See column 12, lines 63-67; column 15; lines 55-58, and column 16, line 10 and lines 61-62.

There is no motivation to combine the teachings of the Eckert reference, the Starkweather reference, and the Altruis reference to produce a composition for wound healing in a patient that includes placental alkaline phosphatase and a gel-forming material, as recited in claim 1. Accordingly, Applicant respectfully requests that the rejection of claims 1-5 and 7-10 under 35 U.S.C. §103 be withdrawn.

Claims 1-5 and 7-10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Nickoloff et al. or Appéré et al. taken with Eckert et al. or Starkweather and further in view of Altruis Biomedical Network. The Examiner stated that the Nickoloff reference and the Appéré reference each disclose a composition containing a buffer serum, alkaline phosphatase, and a

growth factor. The Examiner cited columns 8-9 in the Nickoloff reference and Example 5 of the Appéré reference as teaching a buffer serum, alkaline phosphatase, and a growth factor in a composition. The Examiner further stated that "[t]o use a gel-forming material in a composition for wound healing would be also be [*sic*] obvious since one would want a gel forming material to aid in healing the wound and help comfort the patient and as a medium to contain the enzyme in for [*sic*] delivery to the wound site." Applicant respectfully traverses this rejection.

The Nickoloff reference teaches methods of treating Kaposi's sarcoma by inhibiting the effect of scatter factor, also known as hepatocyte growth factor. Alkaline phosphatase was used as a label in an ELISA assay for quantitating scatter factor. Scatter factor was detected by exposing the alkaline phosphatases label to Immunoselect substrate amplification Kit and 490 nm light. The Nickoloff reference does not teach or suggest a composition for wound healing in a patient that includes placental alkaline phosphatase and a gel-forming material as is recited in Applicant's claim 1.

The Appéré reference discloses racemic or optically active 5-substituted 3,4-dihydroxy-2(5H)-furanone compounds that are useful for treating pathologies involving reactive oxygen species and inflammatory mediators. The portion of the Appéré reference cited by the Examiner refers to the use of alkaline phosphatase as a label in an ELISA assay, much like the Nickoloff reference. In the Appéré reference, the alkaline phosphatase label is detected based on the hydrolysis of paranitrophenyl phosphate, which is then detected with 405 nm light. The Appéré reference does not teach or suggest a composition for wound healing that includes placental alkaline phosphatase and a gel-forming material.

The Eckert et al., Starkweather, and Altruis Biomedical Network references do not remedy the deficiencies of the Nickoloff or Appéré references. Each of these references is discussed above. The combination of cited references does not teach or suggest a composition for wound healing that includes placental alkaline phosphatase and a gel-forming material. Accordingly, Applicant respectfully requests that the rejection of claims 1-5 and 7-10 under 35 U.S.C. §103 be withdrawn.

CONCLUSIONS

Attached is a marked-up version of the changes being made by the current amendment.

The Examiner is invited to telephone the undersigned agent if it is felt that such would advance prosecution of the application.

Applicant asks that claims 1-5, 7-10, and 27-35 be allowed. Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: 7/23/02

Monica McCormick Graham, Ph.D.
Reg. No. 42,600

Fish & Richardson P.C., P.A.
60 South Sixth Street
Suite 3300
Minneapolis, MN 55402
Telephone: (612) 335-5070
Facsimile: (612) 288-9696

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

The specification has been amended at page 2, lines 1-11 as follows:

Healing of wounds is the results of interplay among different cell types and various growth factors. Some of the growth factors, including platelet-derived growth factor (PDGF), epidermal growth factor (EGF), fibroblast growth factor (FGF), transforming growth factor [a (TGF-a)] α (TGF-α) and insulin like growth factor I (IGF-I), are considered to play significant roles by enhancing proliferation of fibroblasts and/or keratinocytes while TGF-β appears to primarily act via increasing matrix formation.

In the Claims:

Claims 11-26 have been cancelled.

Claim 4 has been amended as follows:

4. (Amended) The composition of claim 1 further comprising a growth factor selected from the group consisting of PDGF, EGF, FGF, [TGF-a, IFG-I] TGF-α, IGF-I, insulin and combinations thereof.